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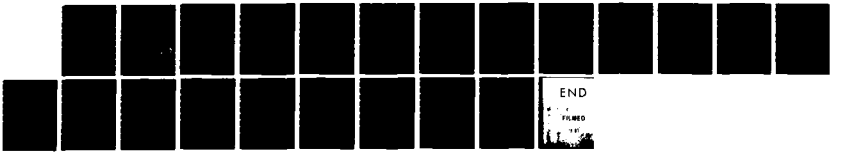

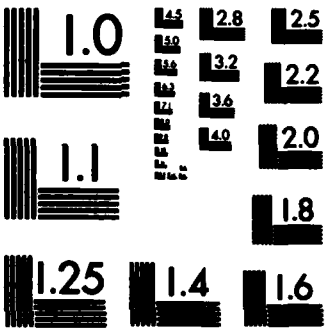

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It is an assumption not an established fact, that "creative individuals and organizations" are more productive in terms of commonly used financial and productivity criteria, and once an individual has become "creative," the firm will benefit. However, descriptions of the organizational outcomes of this creativity is general and this paper has attempted to determine whether most people have specifics in mind when speaking of these outcomes and the need for "creativity" in the organization.

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ORGANIZATIONAL OUTCOMES
of
CREATIVITY

by

Mary Ann Von Glinow
and
Steven Kerr

June, 1983

Center for Effective Organizations
Graduate School of Business Administration
University of Southern California

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ORGANIZATIONAL OUTCOMES OF CREATIVITY

Reason for the Study

"Creativity" is one of the most popular buzzwords of our time. Nearly everyone agrees that it is an exceptionally attractive and valuable commodity, with an almost irresistible allure to people in and out of organizations. A great deal of time and effort has been spent on fostering employee creativity, so that organizations can reap the presumedly rich rewards of having a creative work force.

A great deal has been learned about how to measure creativity. Measurement most often emphasizes creativity's cognitive elements, "consisting of such phases as inspiration, elaboration, and communication (Kris, 1952) or hypothesis formation, hypothesis testing, and communication of results (Stein, 1967, 1974, 1975)." (Smith, 1982). In addition, specific tests such as the Remote Associates Test (RAT) and the Torrance Tests of Creative Thinking, have been developed to assess creative ability (Aldag and Brief, 1981).

Quite a bit has also been gleaned about the biographical, psychological and environmental correlates of creativity (c.f. Roe, 1952; MacKinnon, 1963; Chambers, 1964; Gordon and Marquis, 1966; Taylor and Ellison, 1967; Krohn, 1971; Segal et al., 1980). Most of this research has been from the inside out, insomuch as the individual rather than the employing organization is the focus of attention. An implicit assumption is made that once an individual has been made more creative, his or her firm is bound to benefit. A few

authors have gone so far as to suggest how organizations might benefit, but these suggestions are usually general, typically including such qualities as: improved problem solving capacity; increased divergent thinking; increased tolerance for ambiguity; and "an ability to go beyond received patterns and rules" (Council of Scholars of the Library of Congress, 1980). Techniques designed to foster creative output include: the Gordon technique, Synectics, brainstorming, retroduction and self-interrogation (Aldag and Brief, 1981), as well as a host of other techniques (Treffinger and Gowan, 1971).

What Do People Mean by "Creativity"?

In view of the generality in most descriptions of the outcomes of (organizational) creativity, we became interested in the question of whether most people have anything particular in mind when they speak of an organization's need for "creativity", or when they refer to someone as "creative". Sometimes people use a word because it has a pleasant ring--it creates a vague sense of pleasure or displeasure. Sometimes words evoke sensations in people independent of their meaning. Thus, a group of practitioners nod with approval when told that one of their colleagues has the ability to "make tough decisions". Similarly, academics at a doctoral screening examination can be relied upon to frown with dismay on hearing a colleague remark that a student didn't "integrate" well. We wondered if creativity had a capacity to evoke particular meanings, or whether the word evokes a sensation independent of particular meaning.

What are the Organizational Outcomes of Creativity?

While it is certainly reassuring to know that creative people are intelligent, original, flexible, conceptually fluent (e.g. can list tools beginning with the letter "t"), and adept at word inversions, not too many organizations are in the word-inversion business. Virtually none of the many studies on creativity have shown that the skills and aptitudes attributed to creative people are linked to any favorable organizations outcomes[1], despite the claim that "there is considerable evidence that creative solutions are highly productive" (Steiner, 1968, p. 51). Steiner goes so far as to claim: "If an organization is to survive, let alone prosper, then to a certain extent some of the managerial staff--in fact, the organization as a whole--must be creative" (p. 51). While intuitively appealing, such claims are empirically unsupported in the research literature. Of the approximately 32 descriptors of Steiner's "creative organization" (Steiner, 1964), not one describes what would commonly be considered a "bottom-line variable" by management (though "subordinates have fun" could probably be said to reflect high morale). Of course, Steiner should not be criticized for the book he didn't write, but the fact remains that it is an assumption and not an established fact that "creative individuals" and "creative organizations" are more productive in terms of commonly used financial and productivity criteria. We were therefore interested to learn whether organizational members could, if asked, be specific about the organizational outcomes of creativity.

Method

It seemed to us that, to the extent that employees are asked to think about an aspect of work which is unrelated to their daily jobs, the resulting divergence of responses will be less a tribute to the inherent vagueness of the term than to the fact that the employees haven't thought much about it. We therefore sought respondents who did think in terms of creativity, and who were expected to be creative as a regular part of their daily jobs.

Respondents were drawn from a large oil and gas firm, headquartered on the east coast, with two divisions located on the east coast as well as one in the southwest. The firm employed technicians, engineers and R&D personnel engaged in highly technical, aspects of oil exploration and production. The 182 respondents represented such specialties as computer technology, all engineering subspecialties including those referred to as "petrotechs", and scientific personnel such as geologists and geophysicists.

Because the firm jealously guarded entry, questions were only allowed to the extent that they were seen as central to the organization's mission and priorities. All questions had to be initially screened through "site coordinators" who rejected questions judged inappropriate to their operations. Questions related to creativity, as well as other issues such as attraction, motivation and retention of technical personnel, were administered on site by the research team. The anonymous questionnaire took approximately 45 minutes to complete. Once it was completed, the res-

pondent gave the survey to a member of the research team (not an employee of the organization).

Measures

Three specific questions on creativity were asked:

(1) In order to maximize the possibility that respondents could anchor the concept of "creativity", in operational terms, they were asked:
"Think for a moment about the two most creative people you know in the company. Write down their names below".

(2) They were then asked the following:
"Now, please describe briefly, in the space below, the specific behaviors or actions which caused you to believe that they are creative".

(3) Finally, they were asked:
"Please describe the outcomes or results of the behaviors you described above."

The open-ended nature of these questions constrained our ability to analyze the data statistically, causing us instead to rely heavily on content analysis of the data.

Procedure

All respondents' answers were initially coded and typed to reflect the site from which this questionnaire was administered. Two members of the research team separately, and then jointly, analyzed each response to each of the two research questions listed above. This procedure yielded a wide array of specific behaviors

or actions (relative to question #2) as well as a large number of outcomes or results (relative to question #3). One hundred eighty-two respondents produced 163 usable comments.

To the extent that both researchers were in agreement, subject responses were grouped into categories.

Results

Of the 182 who responded to this questionnaire, 76 (42%) were able to name two people as creative. Thirty-seven (an additional 20%) named one individual. A common reason for declining to respond to this question is that many stated they had not been with the company long enough to judge creative behavior. Virtually no one responded to question #2 or #3 without having first indicated a name for question #1. Thus, almost without exception, respondents had someone specifically in mind when answering subsequent questions.

Creative Behavior or Actions

With respect to our second question, "Describe the specific behaviors or actions which caused you to believe that they are creative", we recieved a richly detailed number of responses. Many respondents described behaviors and actions which are consistent with the research literature on creativity (c.f. Steiner, 1968; Reitz, 1983). In all, 108 (59%) of the respondents were able to describe at least one "behavior or action". Of the total 163 des-

criptors generated, 132 (81%) described actions which have been claimed by various researchers to be characteristic of creative people. These are shown below.

1. Trait-Based Aspects of Creativity. (The number of people who selected each descriptor is shown in parentheses.)
   - stubborn/assertive/determined (7)
   - uses humor (4)
   - imagination (3)
   - open-minded (1)
   - individualistic (1)
   - adaptable (1)
   - inquisitive (1)
   - proactive (1)

   TOTAL = 19

2. Displaying Creativity in Getting the Job Done. While clearly relevant, some descriptions of creative behavior bordered on the tautological, and therefore didn't teach us very much. Among the responses of this kind were:
   - trying to improve programs, materials, etc. (9)
   - innovate/methods/solutions (3)
   - inventive at performing tasks (1)
   - suggessfully accomplished a great variety of tasks (1)

   TOTAL = 14

3. Problem Formulation. Another typical finding from research on creativitv is that creative people tend to spend more time on problem formulation, and are more able to "see problems from many different angles." Our data

produced a number of responses suggestive of this dimension, including:

- creating/developing methods (7)
- seeks new ways (6)
- develops alternative/multiple solutions to problems (2)
- ability to formulate new applications (1)
- uses alternative methods as needed (1)
- seeing problems from many angles (1)
- experiments with new ideas/concepts (1)
- uses new alternative methods as needed (1)

TOTAL = 20

4. Idea/Product Generation. Twelve responses dealt specifically with idea or product generation as typical of creative individuals. Typical of these comments are the following:

- "They are devising new training techniques and procedures and constatnly are coming up with new ideas to improve our work procedures."
- They have produced innovative (creative) pricing proposals"
- "has developed numerous innovative ideas for service station design and promotions"
- "development of new products showing new ideas and high degree of professional software development skills"

5. Complexity. Many theorists and researchers have talked about the importance of divergent thinking and dealing with complexity as central to creative individuals. Five responses dealt with this dimension.

- Quickly solving complex problems (2)

- "Can sense what is needed even when requests are fuzzy" (1)
- Ability to absorb/retain/use much information (1)
- "Integrates information from many aspects of life to solve problems" (1)

6. Lack of Fear. Several researchers have commented upon the willingness of creative individuals to be nonconforming, even deviant in their behavior. Eight respondents contributed descriptions pertinent to this dimension.
   - Unafraid to take risks (5)
   - Unafraid to express views (1)
   - Unafraid to make mistakes (1)
   - Unafraid to tackle the unknown (1)

7. Flexibility. Another important, often cited correlate of creativity is flexibility, usually considered as an individual's behavioral response to a given stimulus. Only two responses directly addressed flexibility. One commented that the focal person "adjusts well to changes", while the other mentioned role flexibility.

8. Using Knowledge and Intelligence. Most researchers agree that intelligence plays some role in creativity. Thirteen respondents described some aspect of intelligence (e.g. "using their heads") in the focal person as evidence of his or her creativity. Two additional responses mentioned "common sense" as important, and one interesting comment described the focal person's "ability to combine theory and practice".

9. Breadth of Knowledge. Another often-found correlate of creativity is breadth of perspective. In this vein, one

respondent described the focal person as "having a broad view". Two others mentioned that the creative individual being described had wide-ranging interests, and was well-rounded.

10. "Getting the Job Done". This category is included here, though it is hard to say to what extent it relates to traditional accounts of creativity, because no fewer than fourteen respondents mentioned this as the key behavior that led to the focal person's being labeled creative.

11. Enthusiasm for Work. Several respondents suggested that enthusiasm is an indication of creativity. Four mentioned that the creative individual loved their occupation or their work. Another stated that the creative individual worked hard and another mentioned "high energy" as indicative of creativity.

12. Communicates. Descriptors in this category include the following:

    - Helps others learn/give advice (7)
    - Articulate/ability with language (2)
    - Provides feedback (1)
    - "able to make esoteric systems understandable to others" (1)

    TOTAL = 11

Other Categories

A number of responses did not fit traditional research notions of creativity. Most of these were mentioned by only one respondent, and so are not included here. However, a few descriptors were mentioned by several respondents, and are included below.

13. People Orientation. Seven responses focused on the human relations orientation of the focal person as evidence that they were creative.

14. Job/Business Knowledge. Three responses focused on the fact that the creative individual possessed good job or business knowledge.

15. Positive Effects Upon Others. Two respondents commented that their focal person was creative because he or she created an enjoyable work environment. Another attributed creativity to the fact that "she encourages others to work hard", while another stated that he "makes others' jobs easier".

16. Got Themselves Promoted. To us, this describes a potential outcome for a creative individual, rather than a specific behavior. However, three people offered this as indicative of creativity.

17. Other Personality Characteristics. A variety of personality characteristics not usually found in the creativity literature were cited by respondents. These included the following; with none being mentioned more than twice:

- dedicated
- charismatic
- leadership ability
- perceptive/insightful
- alert
- outgoing
- takes initiative
- high moral/ethical standards
- quick thinking
- political saavy

In summary, these 17 categories represent the results of our second question, designed to explore the behaviors or actions that let the respondent to label someone as creative or not. The following section focuses on the results of the third question, asking for outcomes or results of the behaviors mentioned above.

Outcomes of Creative Behavior

Many respondents appeared to have some difficulty in describing the outcomes, or results, of creative behavior. Ninety-nine (54%) were able to cite at least one specific outcome of a creative behavior. Of these, ten respondents were unable to distinguish behaviors from outcomes, literally or virtually repeating the answer they gave to question number 2.

True "Bottom-Line" Organizational Outcomes. (The number of respondents using each descriptor is in parentheses):

- Increased Profits (1)
- Increased Revenues (1)

TOTAL = 2

Outcomes Favorable to the Organization's External Environment.

- Increased customer awareness/company satisfaction/company reputation in the marketplace (5)
- Increased quality (4)
- "Increased productivity" (4)
  - o produced new tools and methods
  - o made others more productive
- "Increased productivity in terms of man hours saved" (4)

- Helped company obtain new business (2)
- Decreased turnover (1)
- Produced new products (1)

TOTAL = 21

Outcomes Favorable to the Organization's Internal Processes.

- "Gets job done" (23)
  - attains goals
  - solves problems
- New or improved methods/applications/designs/process (12)
  - "produced manuals and documentation that made sense to users"
  - "creatively produced programs for non-technical people"
- Better/more efficient working environment (5)
- Taught others (4)
- Sets examples/lays foundations for others (3)
- Increased loyalty among peers and subordinates (3)
- Increased others' motivation (3)
- Better teamwork by employees (2)
- Increased morale and job satisfaction (2)
- Installed systems successfully (2)
- Has a more global view of activities (2)
- Developed strategies to solve problems (1)
- Enabled the company to address important issues (1)

TOTAL = 63

Outcomes Favorable to the Creative Individual.

- Well liked/informal recognition (9)
- Promoted (7)
- Awards/Formal recognition (3)
- Sought after for advice or talents (3)
- Pay raises (1)

TOTAL = 23

Discussion

This research, in common with only a few other studies, sought answers related to creativity in the field--specifically in an organization which values creativity and is self-consciously trying to improve the creativity of its employees. Our research attempted to underscore the importance of asking organizational members to describe, in specific operational terms, what creativity actually looks like in an ongoing organization, and what its consequences are for that organization. This is in sharp contrast to most research on creativity, in which people are given "creativity tests" such as the RAT. The approach taken in this research is analogous to early research on leadership where, for example, people were identified as good or poor leaders by virtue of their records or the opinions of their colleagues. Only then were they tested for the presence or absence of particular traits and behaviors. It would have made little sense in those studies for the researchers to have simply subjected people to the tests and on the basis of test results, with no attention to organizational realities, to have pronounced them good or poor leaders. Similarly in studying creativity, we are arguing for research that considers creative behaviors in the field, as supplemental to, if not instead of, creative behaviors on artificial tests.

Having sniped at the bulk of most previous research on creativity, let us now pay homage to what was learned from that research. The fact is that many of the behavioral indicators of creativity supplied by respondents in our study are quite consistent with the extant research literature. This suggests to

us, that correlates of creativity identified primarily in the lab do have operational meaning in the field, and are observable to organization members. Although it is unlikely that more than a few respondents to our survey are familiar with the literature on creativity, most described behaviors that are consistent with that literature. With respect to descriptions of "creative behavior" that have no counterpart in the extant creativity literature, it is impossible for us to tell from this study whether respondents were simply misled, or whether there is something to be said for creative behaviors which show up only under true-life situations.

As previously mentioned, respondents generally found it easier to describe the behaviors of creative people than to describe the outcomes of these behaviors. Only two respondents claimed that the creative behavior they observed led to improvements in profits or revenue. When to these two responses are added all others relating to improvements in productivity, quality, turnover, production of new products, new business and improved company reputation in the marketplace--all of which might be considered "bottom-line indicators" by management--the total is still only 23 responses out of a possible 189. Of course, such a response pattern is understandable from the standpoint that creativity may be necessary, but insufficient, to cause such improvements in the absense of other changes. Nevertheless, it would be impossible from these data to support Steiner's (1968) assertion that to survive and prosper, all organizations must be creative.

With respect to our earlier questioning whether the word "creativity", as in the case with other words in the language, creates an affective response in people independent of its literal meaning, it is perhaps noteworthy that nobody in our sample described any negative organizational consequences of creative employee behavior.

From the organizational behavior literature, we might suppose that creative employees would be more tempermental, less responsive to rules and authority, and more difficult and expensive to manage. Furthermore, the awards, recognition, pay raises and advancement described by many of our respondents as accruing to their (creative) focal person might have been expected to provoke feelings of jealousy and inequity among other employees. However, to the extent that creativity in this organization--admittedly an atypical firm in its value and pursuit of creativity--came wrapped in costs and hard feelings, not a single respondent elected to discuss these in response to our third question (though several respondents did contribute the opinion that the outcome of the creative behaviors they described was nil, as hierarchy or time pressure kept it from being effective).

It should be clear to the reader that the research described in this paper is primitive and exploratory. Nonetheless, we hope we have shown that it is possible for participants in actual ongoing organizations to operationally define creative behavior, and to identify with some success the organizational outcomes of creativity.

Footnote 1: A noteworthy exception to this statement, which shows that it is possible to demonstrate linkages to favorable organizational outcomes, is provided by Walters (1965). In his controlled experiments with the AC Spark Plug Division of G.M., significant changes occurred after creativity training in the number of usable and profitable suggestions made by engineers.

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